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Critical Care

SESSION TITLE: Lessons from the ICU: What have We Learned about the Management of COVID-19

SESSION TYPE: Original Investigations

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CHARACTERISTICS AND ICU OUTCOMES OF PATIENTS WITH CANCER WITH ACUTE RESPIRATORY FAILURE DUE TO COVID-19

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PURPOSE: The purpose of this study is to describe the characteristics and outcomes of critically ill patients with cancer and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection.

METHODS: We reviewed the clinical characteristics and outcomes of adult patients (> 18 yrs) with active or recent history of cancer and confirmed COVID-19 who developed acute hypoxemic respiratory insufficiency/failure with radiographic opacities and were consecutively admitted to two intensive care units (ICU) at Memorial Sloan Kettering Cancer Center between March 16 and May 27, 2020. The hospital adopted an early-intubation strategy during the first 4 weeks and a waiting period of 4 weeks before considering a tracheostomy. Pressure control ventilation and targeted tidal volume of 6 ml/kg predicted body weight and moderate to high PEEP was standard practice. Cases were confirmed through reverse-transcriptase-polymerase-chain-reaction assays performed on nasopharyngeal swab specimens. Data were manually abstracted from electronic health records.

RESULTS: During the study period, a total of 290 patients were admitted to the two ICUs; 90 (31%) patients with active (n=87) or recent (n=3) history of cancer had COVID-19 pneumonia. Mean age was 65 years; 60% were male, 67% were White; 49% had hypertension, 29% had diabetes mellitus; and 50% had a smoking history. 52 (63%) had solid tumors and 38 (37%) had hematologic malignancies. Advanced stage non-small cell lung carcinoma and breast carcinomas were the most frequent solid tumors and leukemia and lymphoma were the most common hematologic cancers. Vasopressors were required in 38 (42%) and CRRT in 8 (9%). In-hospital treatments for COVID-19 included remdesivir in 20%, convalescent plasma in 12%, hydroxychloroquine in 37%, azithromycin in 35%, corticosteroids in 56%, IL-6 inhibitors (tocilizumab, siltuximab) in 6% and IL-1 receptor antagonist in 1%. Acute respiratory failure (ARF) leading to invasive mechanical ventilation (MV) developed in 61 patients (68%) with a mean of 25 days on MV. Prone positioning (self or during MV) was implemented in 44 patients (49%). 18 patients (30%) were extubated after a mean of 11.5 days and 16 (26%) underwent a tracheostomy, 10 of whom (63%) were successfully liberated from MV. Thirty-six patients (40%) had a Do-Not-Resuscitate Order during their ICU stay. As of May 27, 24 (39%) of the 61 patients who required MV have died compared to 5 (17%) of the 29 non-ventilated patients. 40 patients (44%) were discharged home and 25 (28%) remain hospitalized.

CONCLUSIONS: Over a third of cancer patients who developed ARF due to COVID-19 requiring MV in the ICU did not survive.

CLINICAL IMPLICATIONS: Critically ill cancer patients with COVID-19 are at high risk of severe disease and mortality.

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